

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
8 January 2004 (08.01.2004)

PCT

(10) International Publication Number
WO 2004/003335 A2

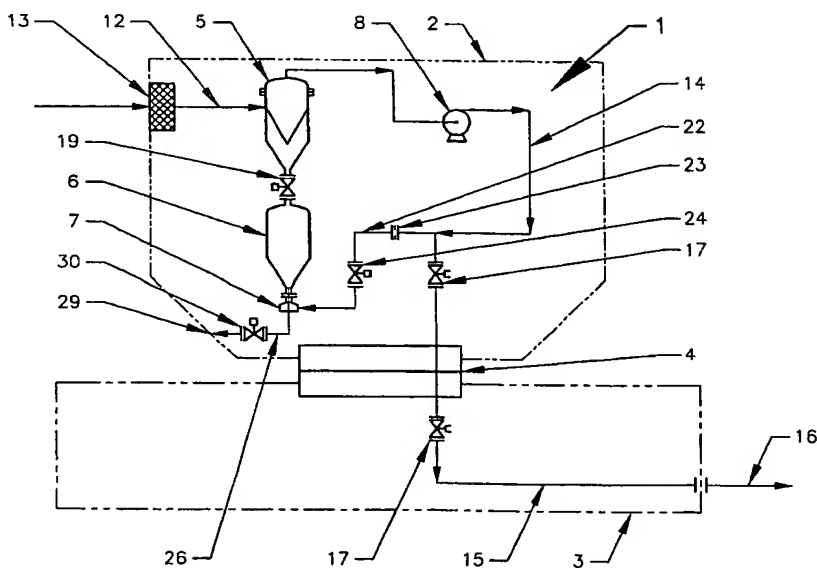
- (51) International Patent Classification⁷: **E21B 21/00**
- (21) International Application Number:
PCT/GB2003/002771
- (22) International Filing Date: 27 June 2003 (27.06.2003)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
0215063.9 28 June 2002 (28.06.2002) GB
- (71) Applicant (for all designated States except US): **ALPHA THAMES LTD [GB/GB]**; Essex House, Station Road, Upminster, Essex RM14 2SU (GB).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **APPLEFORD, David, Eric [GB/GB]**; 5 Greenview Cottages, Theydon Bois, Epping, Essex CM16 7JD (GB). **LANE, Brian, William [GB/GB]**; 41 Rattwick Drive, Canvey Island, Essex SS8 8NF (GB).
- (74) Agents: **JOHNSTONE, Douglas, Ian et al.**; Baron & Warren, 19 South End, Kensington, London W8 5BU (GB).
- (81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

— as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for the following designations AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES,

[Continued on next page]

(54) Title: SYSTEM AND METHOD FOR THE REMOVAL OF PARTICULATES FROM WATER



(57) Abstract: An underwater system (1) has a hydrocyclone (5) for separating sand from seawater, and a pump (8) downstream from the hydrocyclone (5) for drawing seawater upstream of the hydrocyclone into the hydrocyclone. The sand separated from the seawater is collected in a sand storage device (6) below the hydrocyclone. The pump (8) pumps the seawater from which the sand has been removed into a water injection well (16) and a portion of the seawater is diverted into a sand extraction device (7) beneath the sand storage device (6) to flush away the sand collected therein.



FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW, ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG)

— of inventorship (Rule 4.17(iv)) for US only

Published:

— without international search report and to be republished upon receipt of that report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

Fig 1

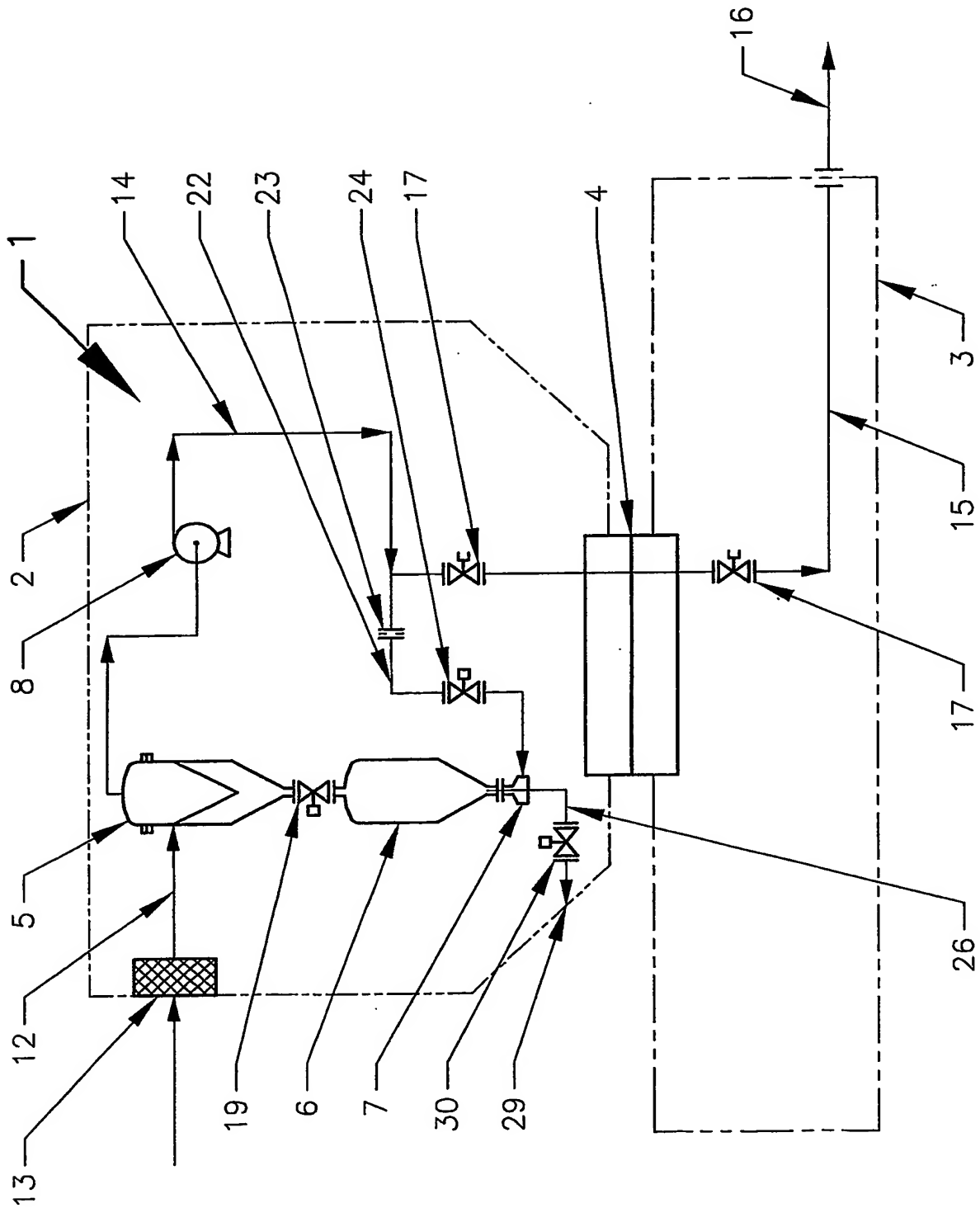


Fig 2

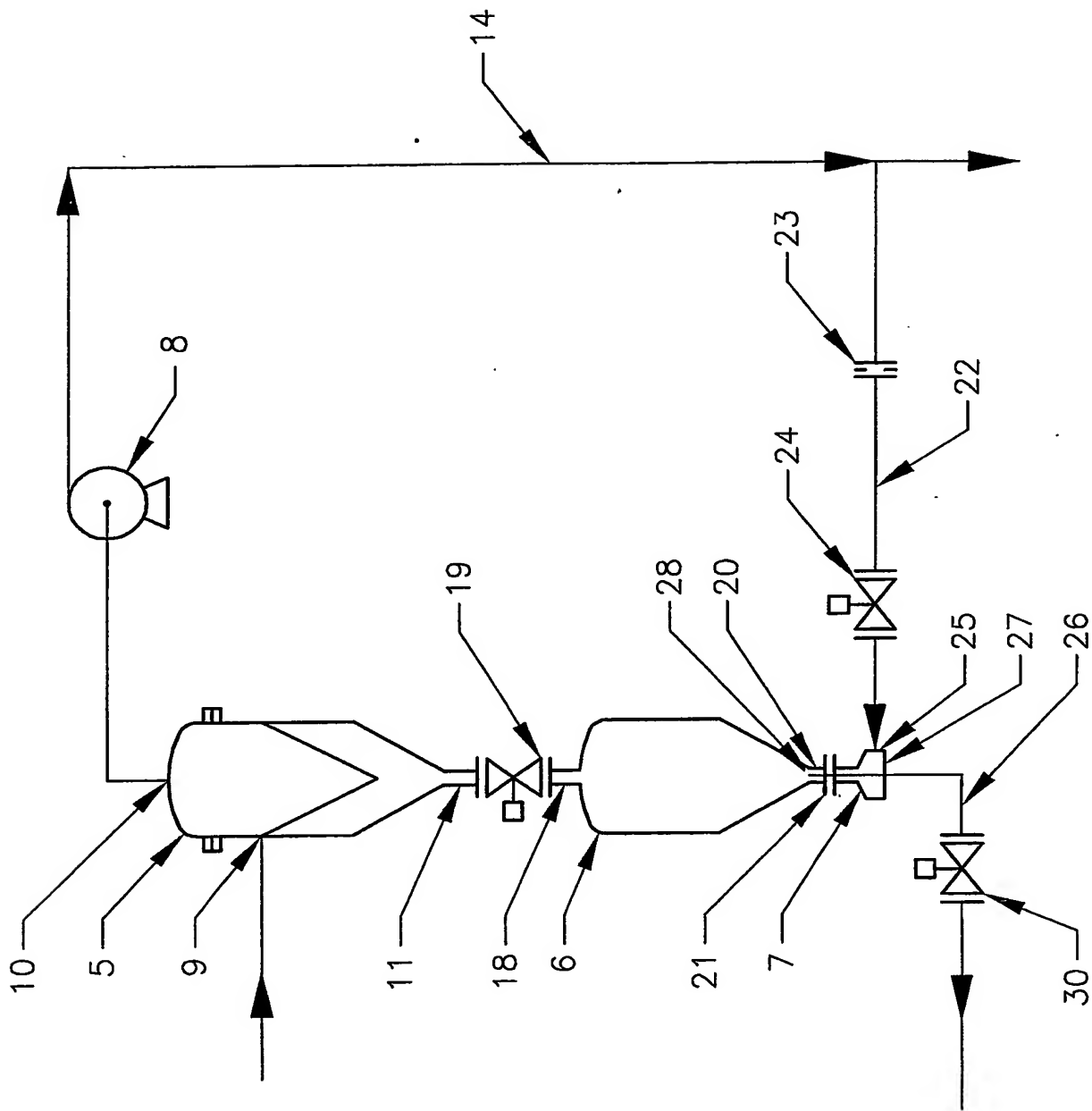


Fig 3

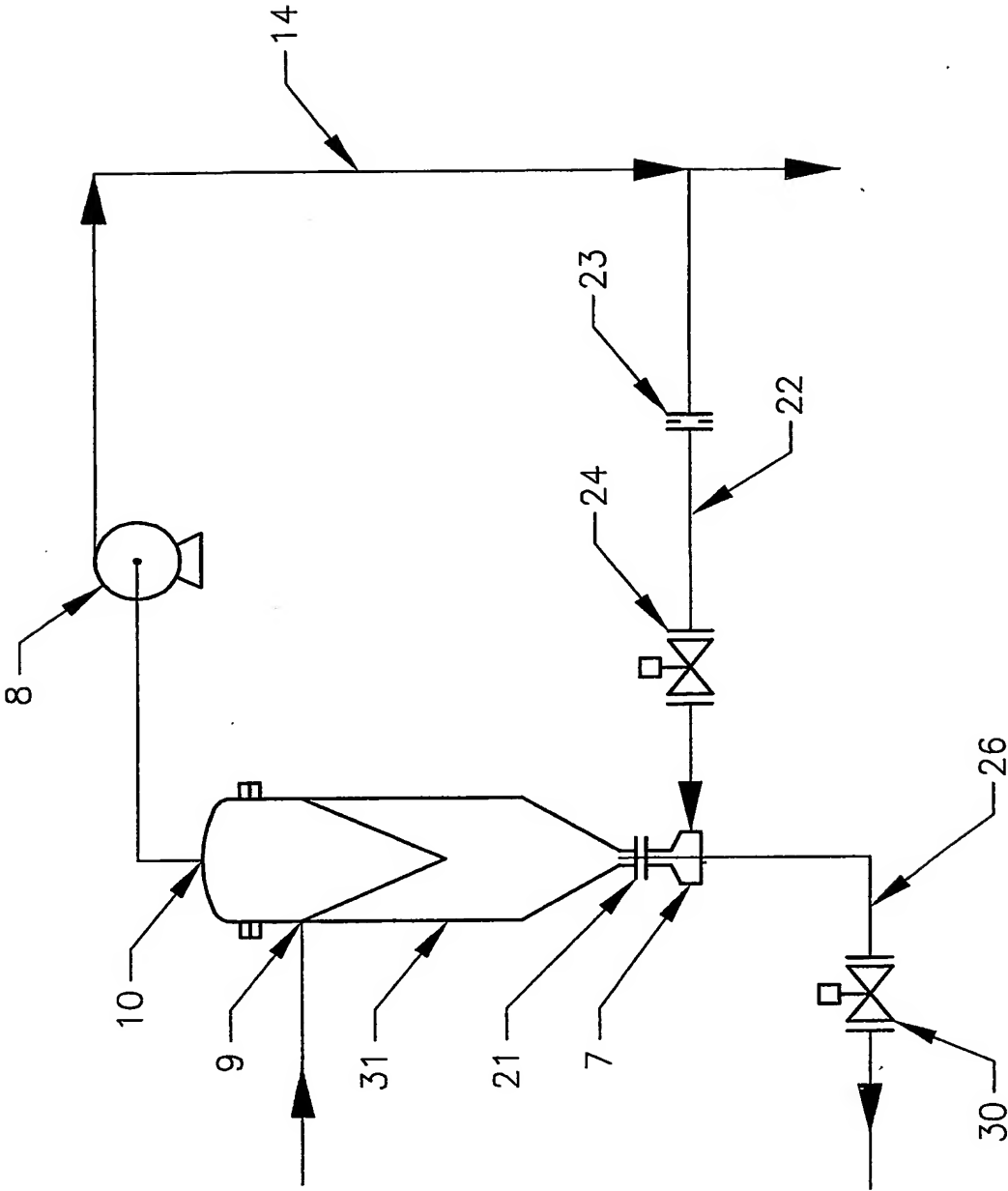


Fig 4

